



FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF MICROBIOLOGY
COURSE TITLE: ENVIRONMENTAL MICROBIOLOGY
COURSE CODE: MCB 523 (3 units)
SECOND SEMESTER EXAMINATION, 2016/2017 ACADEMIC SESSION

Instruction: Answer any 5 questions

Time allowed: 2½ Hours

1a) Write short notes on the following: (i) Plankton, (ii) eutrophication, (iii) biosorption, (iv) bioaccumulation, (v) bioconcentration.

1b) Describe two methods by which elements are made readily available by microorganisms?

2a) Differentiate between bioamplification and bioactivation?

2b) List 5 factors influencing the bioaccumulation and biodegradation of pesticides in the environment?

3a) Write briefly on 5 impacts of pesticides contamination on the environment?

3b) Outline 5 ways you would minimise the negative effects of pesticides in the environment?

4a) Discuss the different categories of contaminants present in wastewater and how it can be treated biologically.

4b) Highlight the objectives of wastewater treatment.

5a) What are the dangers associated with the presence of microorganisms in the air?

5b) Discuss three mechanisms used by microorganisms in the air to adapt to unfavourable environment.

6a) Enumerate the differences between exotoxins and endotoxins

6b) Write short notes on the following: (i) Ergot, (ii) Aflatoxins, (iii) *Fusarium* toxins, (iv) Bacillosis, and (v) *Cyanobacteria diphtheriae*

7a) Write short notes on any three of the following

i) Biopesticides

ii) Bioremediation

iii) Organophosphate

iv) Alkanes in petroleum

b) Explain the detrimental effects of Sulphur Cycle